

Appl. No. 10/643787
Amdt. dated May 31, 2005
Reply to Office Action of April 29, 2005

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) An electrosurgical probe for delivering energy to tissue,
the probe comprising:
a body having a working end comprising an interior conductor covered
by a surface layer ~~[[of]]~~ comprising a substantially insulative material;
at least one conductive element extending through the surface layer,
wherein the conductive element has an exposed first end and an interior second end disposed
proximate to the interior conductor; ~~and wherein~~ the surface layer defining has a thermal
expansion coefficient ~~wherein configured such that~~ the surface layer at a first lower temperature
maintains said second end of the conductive element in contact with the interior conductor ~~portion~~,
and ~~wherein the surface layer~~ at a second higher temperature moves said second end away from
contact with the interior conductor.
2. (Currently amended) The working end of claim 1, further comprising an
electrical energy source operatively coupled to said interior conductor.
3. (Currently amended) The working end of claim 1, further comprising a
return electrode carried about an exterior of the probe and spaced apart from the surface layer.
4. (Currently amended) The working end of claim 1, wherein the surface layer
~~[[is]]~~ comprises a resilient material.
5. (Currently amended) The working end of claim 1, wherein the surface layer
~~[[is]]~~ comprises a polymer.
6. (Currently amended) The working end of claim 1, wherein the surface layer
~~[[is]]~~ comprises a polymer ~~that defines~~ having a positive temperature coefficient.

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7. (Currently amended) The working end of claim 1, further comprising a resistor disposed proximal to the surface layer.

8. (Currently amended) The working end of claim 3, further comprising a resistor disposed between the interior conductor and the return electrode.

9. (Currently amended) The working end of claim 1, wherein the surface layer comprises a ceramic.

10. (Currently amended) The working end of claim 1, wherein the surface layer extends 360° about the exterior of around a perimeter of the probe exterior.

11. (Currently amended) The working end of claim 1, wherein the surface layer has an open cell structure.

12. (Currently amended) The working end of claim 1, wherein the surface layer has a closed cell structure.

13. (Currently amended) A working end of a surgical probe for pressure-controlled Rf energy application to tissue, the working end comprising:

an interior electrode ~~covered with~~ having an elastomeric surface layer;

at least one conductive element extending through the elastomeric surface layer, ~~wherein the element has~~ having a first exposed end and a second end disposed proximate to the interior electrode; and the second end being movable into or away from electrical contact with the interior electrode responsive to a selected pressure on the surface layer.

~~wherein a selected pressure on the surface layer moves said second end of the conductive element into or away from electrical contact with the interior electrode.~~

14. (Currently amended) The working end of claim 13, further comprising an ~~electrical~~ Rf energy source operatively coupled to said interior electrode.

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15. (Currently amended) The working end of claim 13, further comprising a return electrode carried about an exterior of the probe.

16. (Currently amended) The working end of claim 13, wherein the surface layer ~~[[is]]~~ comprises a non-conductive polymer.

17. (Currently amended) The working end of claim 13, wherein the surface layer ~~[[is]]~~ comprises a polymer that defines having a positive temperature coefficient.

18. (Currently amended) The working end of claim 13, wherein the surface layer comprises ~~[[a]]~~ silicone doped with a conductive composition.

19. (Currently amended) The working end of claim 15, further comprising a resistor disposed intermediate the interior electrode and the return electrode.

20. (Currently amended) The working end of claim 1, wherein the surface layer extends ~~360° about the exterior of~~ around a perimeter of the probe exterior.

21. (New) The working end of claim 6, wherein the surface layer is configured to minimize tissue dehydration from Rf energy delivery.

22. (New) The working end of claim 6, wherein the surface layer is configured to utilize Rf energy to actively and passively heat tissue.

23. (New) The working end of claim 22, wherein the surface layer comprises a resistive material configured to be heated by Rf current.

24. (New) The working end of claim 22, wherein the surface layer and the interior electrode have a thermal mass configured to passively conduct heat to tissue to maintain a tissue volume at a selected temperature.